

REMARKS

Claims 1-12 and 17-21 were examined in the most recent final official action, dated September 22, 2006. Claim 21 stands rejected for indefiniteness. Claims 1-8, 17, 18, 20 and 21 stand rejected as obvious over Davis, U.S. Patent No. 5,899,692 in view of Robinson, U.S. Patent No. 4,807,599. Claims 9-12 and 19 stand rejected as obvious over Davis and Robinson and in further view of Schlachter, U.S. Patent No. 4,648,838. The official action also asserts that claim 5 appears to be from a foreign translation, and it notes that the applicants should check all of the claim language and place it in U.S. form.

The applicants request reconsideration of the rejection and allowance of all claims in view of the amendments made to the claims and the arguments made below.

The Rejection for Indefiniteness is Moot.

Claim 21 stands rejected under 35 U.S.C. § 112, second paragraph as indefinite. Claim 21 has been canceled, and therefore this rejection is moot.

Claims 1, 4-12, 17, and 19 Allowable.

The rejection to claim 1 as obvious over Davis in view of Robinson must be withdrawn. Claim 1 recites a functional handpiece comprising, in part, a cannula,¹ a light emission element releasably connected to the cannula, and a light conductor disposed within the cannula that extends from a lamp, through the cannula, and butts against the light emission element within the cannula to emit light into the light emission element.

None of the references cited in this official action disclose or suggest a light conductor disposed within a cannula. As admitted in the official action, the “above

combination does not show a cannula.” Accordingly, the official action relies on Schlachter for the teaching of a cannula. However, Schlachter simply discloses a lamp 13 and a light emission element 21. Schlachter fails to disclose a light conductor that extends through the cannula 5 from the lamp 13 and butts against the light emission element 21. Because neither of Davis or Robinson disclose cannulas, they do not disclose or suggest a light conductor disposed through a cannula.

Furthermore, adding the cannula to the combination of Davis and Robinson fails to produce the claimed handpiece. In a combination of a cannula and the Davis/Robinson device, the cannula would surround the syringe 314. In other words, the cannula would surround the light emission element 314, but the combination does not have a light conductor disposed within the cannula that butts against the separate element of a light emission element (which is releasably connected to the cannula).

The claimed cannula (a tube to be inserted into a patient) provides a protective shell about the light conductor, and further, because the cannula is inserted into the patient’s mouth, a small light emission element can be disposed on the cannula to illuminate the patient’s mouth. This is in direct contrast to the long, narrow syringe 314 of Davis. Because only a small light emission device is needed when the claimed cannula and light conductor is used, when the light emission device is scratched, only a small, relatively inexpensive unit must be replaced. This is an advantage over the long syringe 314 of Davis and the long blade 14 of Robinson. The claimed light conductor disposed within a cannula makes the small light emission element possible. Further, the claimed light conductor disposed within the cannula allows the lamp to be placed in the handle, away from the patient’s mouth, and to eliminate wiring, as opposed to Schlachter.

¹ Merriam-Webster’s On-Line Dictionary defines ‘cannula’ as: a small tube for insertion into a body cavity or

Accordingly, claim 1 is allowable over the cited references. Dependent claims 4-12, 17, and 19 are allowable for at least the same reasons.

Claims 3, 18 and 22 are Allowable.

Applicants respectfully traverse the rejection to claim 3, as amended, as obvious over Davis in view of Robinson. Claim 3 has been amended to include the subject matter of claim 20 (which was previously dependent from claim 3), which also stands rejected over Davis in view of Robinson. Claim 3 now recites a functional handpiece including, in part, an elongate handpiece body having a light emission element forming a forward region of the handpiece, wherein the light emission element can emit light both forwardly out an end portion of the light emission element and laterally out a side portion of the light emission element.

The official action admits that neither Davis nor Robinson expressly discloses a light emitting element that can emit light laterally out a side portion of the element. Instead, the office argues, without citing either reference, that “the light transmitting element will inherently allow for light to emit from the front and sides.” The applicants respectfully traverse that Davis inherently discloses that light emits laterally out a side portion of the element. The MPEP places a high burden on the Office in finding inherency:

“The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic...To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”

MPEP § 2112(IV). Thus, whether or not the device disclosed by Davis might emit light out a side portion of the syringe tip 314 is immaterial. The extrinsic evidence must make clear that the device of Davis necessarily emits light out a side portion of the syringe tip 314.

In contrast, the only extrinsic evidence, Davis itself, indicates to one of ordinary skill that the syringe tip 314 emits no light out its side portions. Davis discloses that “[l]ight from the light source is directed into one end of the syringe tip and carried along the length thereof. At the opposite end of the syringe tip, the light radiates from the syringe tip and can be used to illuminate the oral cavity.” Davis, col. 2, lines 21-24. See also col. 2, line 66 – col. 3, line 2 (“light emitting from the ends of the fiberoptic bundles is transmitted into the syringe tip which then carries the light along the length thereof and the light is emitted from the end of the syringe tip and can be used to illuminate the oral cavity of a patient.”). Davis thus indicates to one of ordinary skill that the syringe tip 314 internally reflects all light along its side portions such that light is emitted only at the end. Accordingly, not only is the noted claim element not necessarily present in Davis, Davis affirmatively discloses that the noted claim element is not present.

Furthermore, there is no suggestion or motivation to alter the structure of the syringe tip 314 to permit light to emit laterally from a side portion, because Davis effectively teaches against such a structure. “A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” MPEP § 2141.03(IV). It is a stated goal of Davis that light be transmitted into the patient’s oral cavity to provide illumination of the cavity. “It is an object of the present invention to provide a useful source of light that can be transmitted into the oral cavity of the patient[.]” Davis, col. 2, lines 14-16. See also above. The syringe tip 314 is a long, narrow structure. It is probable that some of the syringe tip 314 is never inside the oral cavity during use, especially with

patients having a small oral cavity such as a child, or where the dentist is lighting an area near the front of the oral cavity. If light were emitted laterally out a side portion of the syringe tip 314 that was not inside the oral cavity, that light would be lost, and the illumination of the oral cavity would be diminished. In other words, this light would not be “transmitted into the oral cavity of the patient[,]” as desired by Davis. Accordingly, there is no suggestion in Davis to permit the light to emit laterally out side portions of the syringe tip, because such a structure is in contravention to the stated object of Davis.

Further, such a modification to the device of Davis would render Davis’s device unsatisfactory for its intended purpose. See MPEP § 2143.01 (“If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to made the proposed modification.”). Again, by permitting light to emit laterally from side portions of the syringe tip 314, one is diminishing the capability of Davis’s device to illuminate the oral cavity. This is particularly relevant to small oral cavities and frontal areas of oral cavities, because in these situations light would be emitted outside the oral cavity. This is in direct contravention of the goals of Davis, as outlined above, and therefore there is no suggestion to modify Davis’s device as claimed.

Accordingly, because Davis teaches away from the elements of claim 3, and the proposed modification would diminish the capability of Davis’s device, there is no suggestion in any regard to modify Davis’s device to meet the claim limitations. Claim 3 is allowable over Davis itself and any combination of Davis with another reference.

Further, Robinson also teaches away from permitting light to emit laterally from a side portion of the light emission element. Robinson discloses that “[t]he light impinging on rear surface 80 will be conducted along the length of blade 14 to the distal end thereof. The upper surface 82 and the lower surface 84 of blade 14 preferably are made smooth and

uninterrupted so as to enhance total internal reflection and minimize any loss of light through these surfaces.” Robinson, col. 4., lines 43-49. Thus, Robinson instructs one of ordinary skill to avoid permitting light to emit laterally. Even if Robinson could be combined with Davis to arrive at the claimed invention (which it cannot because Davis teaches away from the claimed invention), there is no suggestion to do so because Robinson as a whole leads one of ordinary skill away from the claimed invention. See MPEP § 2145(X)(D)(2) (“It is improper to combine references where the references teach away from their combination.”).

Because Davis fails to disclose that light emits laterally out a side portion of a light emission element, and because both Davis and Robinson directly teach away from such a construction, claim 3 is allowable. Dependent claims 18 and 22 are allowable for at least the same reasons.

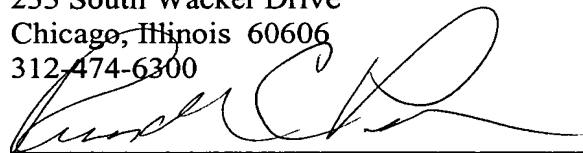
CONCLUSION

In view of this amendment, Applicants submit the pending application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

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